

Cobotic Cooperation

Caroline awakened to dazzling sunbeams stretching in through her window. The sun was climbing up the sky, demanding her to rise as well. As she untangled herself from her blankets, a beeping tone that progressively got louder joined faint whirring noises.

What's that? Caroline thought anxiously. *Is a device malfunctioning?*

She then remembered the “foolproof” machines right above her ceiling, and felt even more anxious. The robots doing the roof repairs worked day and night without any kind of rest, which felt completely unnatural to her. But this was the new way of life, so Caroline had to get used to it eventually.

She hopped off her bed and strode sleepily down the hall. She descended down her L-shaped staircase, as the mechanical tune faded away. Heading for the front door, she worried about the artificial intelligence among her everyday life. Of course, there was the basic technology – refrigerators and traffic lights didn't concern her – but now there was so much more. Artificial intelligence was being used in hospitals, space missions, office buildings, and even babysitting. Caroline couldn't even go to the grocery store without robotic cameras spying on her.

She snapped back to reality as the morning breeze played with her hair. She felt herself start to relax as she breathed in the fresh, chilly air, but instantly tense up again when she saw a prodigious procession of robots marching to the local school. There, they would clean and work with small groups of students that needed extra help. Caroline pitied the children who were forced to stay in a classroom with a sinister machine that continuously quizzed them.

She briskly strode down the winding pathway, carefully navigating around chunks of gravel that peeked out of the cement that held the stones of her driveway together. She swerved around to open her mailbox. A metallic odor filled the air as she unlatched and opened the lid. She reached in and pulled out the mail. The only thing that had been sent to her was a weekly magazine that she had subscribed to. Before reading the contents of the magazine, she hiked up the steep slope of her driveway and strolled into her house.

She perched on a chair in her living room and turned around so that no one could see what she was reading through the windows. She didn't want to risk being caught with it, as the magazine was full of articles about the disadvantages of the robotic workforce, how it was affecting income inequality, and the dangers of automation. The company found ways to smuggle magazines into customers' mailboxes, but kept it secret from those who hadn't subscribed.

As she flipped through it, one particular article seized her attention.

“The unemployment rate has significantly increased over the past few years. Poor people are getting poorer as rich citizens get wealthier,” Caroline unconsciously read aloud as she skimmed the passage.

“The implementation of automation is the major cause of this. If you don't start saving money now, you may not have any food to put on the table in a few years.” She stopped reading as the rest of the passage was nothing more than advertisements for a bank.

The passage was troubling. Would she really end up as a beggar on the streets? Hoping for ideas on how to stop this from happening, she flipped through the other pages. Her eyes wandered to a section titled “The Meaning of Efficiency Lost in the Search for Efficiency.”

The title intrigued her and she began to explore the writing.

“Companies are progressively adding more automated devices to their organizations,” the article read.

“Although the owners believe this improves productivity, it accomplishes nothing close to that. Cobotics is the only way to circumvent income inequality, but it can greatly decrease efficiency. This is because there is often a lack of communication between devices and humans in almost all automation-using companies. For example, if a human worker finds out something important that can greatly impact the company, they usually cannot directly tell the devices that would need to know that information. The worker would have to pass that message along to a series of people until someone could help the robot, which would waste an extensive amount of time.”

As Caroline read this paragraph, she realized this *was* something that happened often in her workplace.

Since she was part of the shadow workforce, her responsibility was to make sure the devices did what they were supposed to do, but she also had to take over when the robot was confused.

And robots got confused a lot.

But most of the time, robots only got confused when humans tried to talk to them. If a human worded what they said differently than how the robot was programmed to respond, the robot wouldn’t understand what they were saying. So Caroline would have to step in, but because she was responsible for managing many aspects of the company, she could never assist the robots immediately.

Caroline continued reading, eager to finish the passage.

“Even in the circumstances where humans and robots *can* communicate, it’s not always effective. It is not uncommon when a human worker tries to tell an automated device to perform a task, but the robot doesn’t do exactly that. This can result in aspects of the company getting damaged, and the organization’s social status could reduce.”

This was very true, at least in the company Caroline used to work at, which was an organization that helped with money management and secured account savings.

Human workers would do most of the work, but the company had installed artificial intelligence to do labor related to maintaining the building and advertising. When a robot did a poor job, the company’s reputation suffered.

Caroline reached the final conclusion of the article.

“In order to *restore* order, there are two things that could be done: stop employing robots, or program them better.”

Caroline thought about the author’s argument and proposal. She agreed with them. Communication between automated devices and human workers *absolutely had* to be improved.

But she knew that companies just *couldn't* stop employing robots, and even if they programmed all new robots differently, what would they do with all the existing ones? There had to be another solution, a better one.

Caroline set the magazine down and absent-mindedly stared out the window as she contemplated a plan. As a single individual, she knew she couldn't accomplish much, but she hoped she could make a significant difference in the company she worked at. If others saw that happening, they could be inspired to make similar changes in their own organizations.

Caroline suddenly realized what the perfect solution would be. She sprinted outside, opened her car door and sat behind the steering wheel. Almost everyone she knew had a self-driving car, but she didn't trust those. She preferred to drive herself.

Caroline backed her car out of the driveway and drove down the main road. After two left turns and one right, she arrived at the overflow parking-lot of her office. After parking her car, she hiked up the steep slope of the sidewalk until she found herself staring at the tall brick building in front of her.

The entrance of the building was plain and boring, as it was merely a set of wooden doors. But as soon as Caroline walked through those doors, she was astonished by how beautiful the lobby looked. Because the walls were made of mirrors, when sunlight shined into the room, the light reflected from the mirrors onto all the other surfaces. Caroline came into this room every weekday, but she was always amazed by the dazzling sight.

With effort, Caroline peeled her eyes away from the reflective sunbeams and walked down one of the many hallways that branched off from the lobby.

She knocked on the door of the manager's office. She felt the anxiety growing inside her. But before she could plan her speech, the door swung open. The manager looked at her, perhaps recognizing who she was and wondering why she was on the main floor, instead of working downstairs, which was where the shadow workforce was supposed to work.

"What do you want?" The manager asked.
"I would like to propose a change in our company's policies," Caroline said, praying the manager would listen to her.

"What do you think is wrong with what we already do?" The manager said impatiently.

"Automated devices and humans don't always communicate that well. If we have an educational program where human workers could learn about the way robots are supposed to function and how robots respond to the way humans talk, the communication in our company will improve greatly," Caroline said nervously.

"That's actually not a horrible idea," The manager said. "I'll probably do that."

Caroline was surprised the manager had listened to her, but relieved too. Now, at least one company would have a more efficient cobotic workforce. She had done what she had to do.